Texas Natural Resource Conservation Commission

INTEROFFICE MEMORANDUM

To: Distribution **Date:** June 28, 1999

Thru: JoAnn Wiersema, Manager
Toxicology & Risk Assessment
Chief Engineer's Office

From: Michael Honeycutt, Ph.D.
Toxicology & Risk Assessment
Chief Engineer's Office
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Subject: Interim Action Level for Perchlorate

Concern about perchlorate contamination at two sites in Texas has prompted staff from the Office of Waste and the Office of Water to request that the Toxicology & Risk Assessment Section develop an action level for perchlorate in drinking water. Currently, there is neither an USEPA- promulgated Maximum Contaminant Level nor Advisory Level. After consulting with USEPA Regions 6 and 9, the Agency for Toxic Substances and Disease Registry, the Texas Department of Health, and several states that also have perchlorate contamination, we have developed an interim action level of 22 µg/L (ppb) for perchlorate.

The interim action level of 22 µg/L was derived using the interim provisional reference dose (RfD) of 0.0009 mg/kg·day published on December 31, 1998 by USEPA's National Center for Environmental Assessment. USEPA cautions that this RfD is in an interim status and that a range of older provisional RfDs (0.0001 mg/kg·day to 0.0005 mg/kg·day) should be used until the interim provisional RfD is finalized. However, in reviewing the interim provisional RfD, I have found it to be based on the best scientific information available to date and therefore more scientifically-defensible than the older provisional RfDs. Numerous toxicologists from other agencies I have consulted on the matter concur. Please note that we fully expect that the interim provisional RfD published by USEPA will change once the final review currently ongoing is complete (tentatively at the end of this year). In any event, the general concensus is that the interim provisional RfD is conservative and is not expected to change drastically in either direction. Given the interim status of the RfD, the action level we are deriving should also be considered interim and subject to change when more data become available.

Please note that, based on perchlorate's mechanism of toxicity, we would expect children to be the most susceptible subpopulation. Therefore, we are using child exposure factors (0.64 L/day ingestion rate, 15 kg body weight) rather than adult exposure factors (2 L/day ingestion rate, 70 kg body weight) to calculate the interim action level for perchlorate.

Also note that in developing the interim action level for perchlorate, we considered other perchlorate action levels that are being used in other states. One such value being used in California, 18 µg/L, is based on the older provisional RfD of 0.0005 mg/kg-day and uses adult exposure factors. Another value used in Nevada, 32 µg/L, is based on the interim provisional RfD of 0.0009 mg/kg-day and also uses adult exposure factors. Again, we are confident that the interim action level of 22 µg/L which was developed using the interim provisional RfD and child exposure factors is the most appropriate and scientifically-defensible.

If you have any questions, please call me at extension 1793.

Distribution:

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Notes per conversation w/ Michael th.
- updated risk reduction rule section of the TNRCC Web page reflects a value for perchlorate 22 ppb as calculated under new regs which will adopted 8/99 (calculated w/ child exposure model)

50-80,000 ppb

gw/surface water

Caddo Lake

discharge 10-14,000 ppb

asked Army to stop discharge

- said perchlorate not a health issue

- TNRCC - will sample next week.

St Nebraska - 5 ppb - perchlorate

Lewiston - 200 ppm - nitrate

near Beatrice

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FACSIMILE TRANSMISSION FORM

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DATE: 7/19 *TIME: 1030 am*

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COMMENTS: Catherine, here is a copy of the letter we rec'd last week. IT is an inter-office memo. I will forward any additional guidance from TNRCC or any other of our states as I receive it. Thanks!

Debra